Volume 078

Article 01

CLEARWATER RIVER DEVELOPMENT OF

SPRING CHINOOK AND STEELHEAD STOCKS

COLUMBIA RIVER FISHERIES DEVELOPMENT PROGRAM

Annual Project Closing Report

Period Covered: October 1, 1987 to September 30, 1988

Submitted to

National Marine Fisheries Service
Contract Number NA-88-ABH-00026

by

Ronald L. Lindland
Regional Fishery Biologist
and

Bert Bowler
Regional Fishery Manager

April 1989

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF **APPENDICES**

ABSTRACT

Spring chinook releases into the Clearwater River drainage during 1988 totaled 2,110,664 smolts, 706,027 fingerlings, and 1,795,530 fry. Release from Red River pond totaled 291,200 chinook fingerlings (25.0/lb.) during early October of 1988; these were Clearwater stock.

Chinook redd counts increased in the Lochsa drainage, remained stable in the Selway, and decreased in the South Fork tributaries in 1988 compared to 1987. The South Fork decrease occurred mainly in Red River where the total number of chinook adults trapped declined from 519 in 1987 to 394 in 1988.

A total of 1.20 million eyed steelhead eggs from DNFH were placed in Meadow Creek (1,021,808) and Red River (182,250) incubation channels during 1988. Steelhead smolt releases in 1988 totaled 613,973 in the South Fork Clearwater and tributaries, 254,898 in Clear Creek, 237,156 in the Lolo Creek drainage, 166,190 in the North Fork Clearwater, and 1,429,516 into the main stem Clearwater River.

Authors:

Ron Lindland
Regional Fishery Biologist

Bert Bowler
Regional Fishery Manager

INTRODUCTION

Historically, the Clearwater River drainage supported major runs of summer chinook salmon and summer steelhead trout. Also, it was believed the small populations of tall chinook and coho salmon spawned in the drainage. In 1927, the Washington Water Power Company (WWP) built a hydroelectric dam four miles upstream from the mouth of the Clearwater River. Inadequate fish passage at the dam virtually eliminated chinook runs, leaving underutilized spawning and rearing areas. Although steelhead were able to negotiate the ladder, it was felt the population was reduced. It was not until the late 1940s that the passage problems were corrected and chinook again began to move over the dam. In 1973, the dam was removed as part of transforming Lewiston into an inland seaport.

In the late 1920s, another hydroelectric dam was built by WWP in the South Fork Clearwater River near Stites, Idaho. This dam stopped all upstream fish movement until 1963 when it was removed. In 1970, the North Fork Clearwater River was lost to salmon and steelhead production by the construction of Dworshak Dam. Dworshak National Fish Hatchery (DNFH) was built to mitigate the loss of steelhead.

This report summarizes the activities that occurred during 1988 as part of the efforts to restore salmon and steelhead to the Clearwater drainage. Attached to the report is an appendix that describes the history of those efforts from 1961 to 1988. Rather than giving detailed descriptions of hatchery operations with their success and failures, the historical perspective covers mainly off-site introductions of eyed eggs to hatching channels and releases of fry, fingerling, and smolts. Two federal hatcheries, Dworshak and Kooskia, were completed in the early 1970s within the Clearwater drainage. A third hatchery comparable in size to Dworshak is expected to be completed by the early 1990s.

REPORT OF PROGRESS

Eyed Egg Plants and Fry Emergence

Steelhead

Plants of eyed steelhead eggs totaled 1,021,808 in the Meadow Creek (McComas Meadows) incubation channel and 182,250 in the Red River incubation channel during 1988. All eggs were collected from adults returning to DNFH and were thought to be IHN-negative. Red River and Clearwater Ranger District personnel assisted in placing the eggs in the channels and monitoring flow and fry emergence. All emerging fry were released directly into Meadow Creek and Red River, respectively. Tables 1 and 2 summarize eyed steelhead egg plants into these channels since 1978.

Table 1. Summary of eyed egg plants into Red River incubation channels, 1978-1988 (DNFH - Dworshak National Fish Hatchery).

Year	Species	Number of eggs planted	Egg source	Distribution
1978	steelhead	1,617,75	DNFH	All at channel
1979	steelhead	1,644,500	DNFH	All at channel
1980	steelhead	699,500	DNFH	All at channel
1981	steelhead	1,526,000	DNFH	All at channel
1982	steelhead	1,500,000	DNFH	All at channel
1983	steelhead	1,280,000	DNFH	All at channel
1984	steelhead	0	--	
1985	steelhead	914,350	DNFH	All at channel
1986	steelhead	0	--	
1987	steelhead	600,000	DNFH	All at channel
1988	steelhead	182,250	DNFH	All at channel

Table 2. Summary of eyed egg plants into Meadow Creek (South Fork Clearwater) incubation channel, 1981-1988.

Year	Species	Number of eggs planted	Egg source	Distribution
1981	steelhead	1,360,000	DNFH	All at channel
1982	steelhead	1,140,000	DNFH	All at channel
1983	steelhead	766,750[a]	DNFH	All at channel
1984	steelhead	0		
1985	steelhead	0		
1986	steelhead	980,000	DNFH	All at channel
1987	steelhead	770,000	DNFH	All at channel
1988	steelhead	1,021,808	DNFH	All at channel

[a]Eggs were IHN-positive.

Spring Chinook

On October 31, 1987, we planted approximately 430,000 eyed spring chinook eggs in the South Fork Clearwater drainage. Newsome Creek and Crooked River received approximately 50,000 eggs each, with these eggs being planted directly into available instream gravel. The remaining 330,000 eggs were placed in the incubation channel on the South Fork of Red River near the Red River Ranger Station. Help in placing the eggs was received from the USFS, Nez Perce Tribe, ISSU, and Kelly Creek Flycasters. Survival of eggs in the Red River incubation channel was poor, with only a few thousand fry emerging. Fry emergence in Crooked River and Newsome Creek could not be assessed.

Fry, Fingerling, Smolt, and Adult Releases

Steelhead

The Clearwater River and selected tributaries received a total of 2,701,733 smolts and 540 unspawned adults during 1988 (Table 3). Appendix A (Tables 6-10) summarize previous years' releases of steelhead life stages into the Clearwater River drainage since 1971.

Chinook

Table 4 summarizes spring chinook smolt, fingerling, and fry releases within the Clearwater drainage during 1988. Chinook production from Red River rearing pond each year since its construction in 1977 is summarized in Table 5. The 1988 release was made on October 12. A total of 56,046 (19.22) of the 1988 release were marked. Chinook released from Red River pond in 1988 were Clearwater stock.

Spring Chinook Spawning Surveys

Spring chinook redd counts increased in the Lochsa drainage, remained stable in the Selway, and decreased in the South Fork tributaries in 1988 compared to 1987 (Table 6). Lochsa redd counts nearly doubled from 36 in 1987 to 71 in 1988. Redd counts in Red River decreased for the third straight *year;* however this is influenced by adults being trapped at the weir in 1987 and 1988.

Red River Weir

The permanent weir and adult trap was operated for the second year in 1988. A total of 394 adult chinook were trapped; 158 of these were released upstream to spawn naturally. Jacks comprised less than 1% of the total adult chinook trapped. In 1987, a total of 519 adults were trapped, with 6.7% being jacks.

Table 3. Releases of steelhead adults and smolts from DNFH into the Clearwater River drainage during 1988.

Date	Release site	Number released	Number/ pound
3/30	N. Fk. Clearwater	26,171	7.0
4/18	N. Fk. Clearwater	140,019	11.0
4/19	Crooked River	201,325	7.4
4/20	Newsome Creek	190,708	7.1
4/20	American River	56,885	6.1
4/21	American River	148	adult
4/22	American River	155	adult
4/22	Eldorado Creek	200,806	6.7
4/22	Clear Creek	254,898	5.7
4/25	American River	237	adult
4/27	Lolo Creek	36,350	5.5
4/28	S. Fk. Clearwater	165,055	6.6
5/2-4	Main Clearwater	1,429,516	6.1
TOTAL ADULTS		540	
TOTAL SMOLTS		2,701,733	

Table 4. Releases of spring chinook salmon fry, fingerling, and smolts into the Clearwater River drainage, 1988.

Date	Release site	Number released	Number/ pound	Egg source
3/17	Lochsa (Powell)	200,105	22.4	DNFH
3/22	Clear Creek	778,407	20.5	KNFH
3/30	N. Fk. Clearwater	1,132,152	20.6	DNFH
3/30	N. Fk. Clearwater	222,737	85.6	DNFH
5/5	Lolo Creek	103,800	294.0	Rapid R.
5/5	Eldorado Creek	53,200	294.0	Rapid R.
5/10	Crooked Fork	40,600	380.0	Rapid R.
5/10	Hopeful Creek	62,200	380.0	Rapid R.
5/10	Crooked Fork	75,900	380.0	Rapid R.
5/10	Crooked Fork	21,300	380.0	Rapid R.
5/11	White Sand Creek	108,300	361.0	Rapid R.
5/11	Big Flat Creek	72,200	361.0	Rapid R.
5/11	White Sand Creek	19,500	361.0	Rapid R.
5/12	American River	113,800	256.5	Rapid R.
5/12	Newsome Creek	112,100	256.5	Rapid R.
5/13	Meadow Creek	100,100	256.5	Rapid R.
5/13	Crooked River	150,000	258.0	Rapid R.
5/16	Crooked River	50,100	258.0	Rapid R.
5/16	Red River	50,100	258.0	Rapid R.
5/24	American River	81,542	152.4	DNFH
5/24	Newsome Creek	84,766	157.6	DNFH
5/25	Lolo Creek	43,722	160.1	DNFH
6/2	Brushy Fork	102,000	185.0	Rapid R.
6/3	Brushy Fork	100,000	185.0	Rapid R.
6/10	Ten Mile Creek	150,100	225.7	Rapid R.
6/14	White Sand Creek	100,200	136.0	Rapid R.
9/28	N. Fk. Clearwater	192,090	33.1	DNFH
10/-	Red River	291,200	25.0	DNFH
TOTAL FRY		1,795,530		
TOTAL FINGERLINGS		706,027		
TOTAL SMOLTS		2,110,664		

Table 5. Summary of Red River pond spring chinook production, 1977-1988.

Year	Date release into pond	Number released into pond	Number/ pound when placed in pond	Source	Date release from pond	Estimated number released from pond	Number/ pound when released	Number marked	Percent marked	Type of mark
1977[a]	7/6-12	501,600	100	Rapid R.	8/30	350,000	ND	0	0.0	- - _ _ _ _ _
1978	6/28	200,025	127	Rapid R.	9/21	200,000	ND	37,200	18.6	CWT/AdC1
1979	7/2	232,500	155	Rapid R.	9/28	225,000	27	45,000	20.0	CWT/AdC1
1980	6/24	293,600	115	Rapid R.	9/18	265,000	25	51,000	19.2	CWT/AdC1
1981	5/29	282,000	140	Carson	9/10	268,000	17	9,000	3.4	Freeze brand
1982[b]	--	0	--	- - - - -	--	--	--	--	--	- - _ _
1983	6/14	306,000	255	Rapid R.	10/20/83	260,000	21	60,000	23.1	CWT/AdC1/F8
					4/17/84	40,000[b]	ND	40,000	100.0	CWT/AdCl/FB
1984[c]	7/2	80,000	160	Red R.	4/18/85	8C,000	22	0	0.0	- - - _ _ _ _
1985[c]	6/26	152,000	105	Red R.	4/4/86	136,800	30	0	0.0	- _ - - - - _
1986	- -	0	--	- - - - -	--	--	--	--	--	_ _ _ _ _ _
1987	6/4	238,900	206	Rapid R.	10/5/87	233,000	41	46,050	19.8	CWT/AdC1/F8
1988	6/8	301,574	104	Clearwater	10/12/88	291,200	25	56,046	19.2	CWT/AdCl/FB

[a]Fish were heavily infected with "Ich" in 1977 and were released early; survival was probably poor after release.

[b]98,000 age 0 chinook (Rapid River stock) that were reared at Hagerman National Fish Hatchery were released into Red River near the pond in June.

[c]Fish overwintered in pond and released in spring.

Table 6. Clearwater River drainage chinook salmon redd counts, 1980-1988 (NC +not counted).

Streams	Method of survey	1980	1981	1982	1983	1984	1985	1986	1987	Five-year averag	1988
Selway Drainage											
Selway River	aer al	40	47	38	26	30	40[a]	31	34	32	
Bear Creek	aerial	7	8	8	8	6	NC	10	9	8	10
White Cap Creek	aerial	3	4	3	4	6	NC	7	6	5	5
Moose Creek	aerial	4	6	5	6	7	NC	9	8	7	7
SUBTOTAL		54	65	54	55	49	40	57	57	52	56
Lochsa Drainage											
Crooked Fork	ground	16	27	34	7	28	47	30	28	28	42
Brushy Fork	aerial	10	25	17[b]	6[b]	9[b]	14[b]	14	8	10	29
SUBTOTAL		26	52	51	13	37	61	44	36	38	71
South Fork Drainage											
Newsome Creek	aerial	7	7	5	7	1	7	7	20	8	20
Crooked River	aerial	8	9	4	12	22	10	9	17	14	27
Red River	aerial	38[c]	80	159	193	175	222	155	140	177	111
American River	aerial	7	12	21	9	NC	23	14	31	20	12
SUBTOTAL		60	108	189	221	198	262	185	208	219	170
TOTALS		140	225	294	278	284	363	286	301	309	297

[a]Estimate by expansion using previous five years' ground:aerial ratio.

[b]Ground count rather than aerial.

[c]New section added fron Ditch Creek to Otterson Creek.

Hatchery personnel collected 361,743 green eggs from chinook trapped at the Red River weir during 1988. Eye-up percentage was 72.81. Fry resulting from these eggs will be reared at DNFH and released into Red River rearing pond in June of 1989.

Adult Spring Chinook Returns to the Clearwater Drainage

Table 7 summarizes returns of adult spring chinook to the Clearwater drainage since 1950. Returns from 1950-1972 are actual counts over the old Washington Water Power Dam at Lewiston. Returns from 1973 to date are regression estimates based on redd counts plus actual rack returns to DNFH and KNFH (Figure 1).

The 5,520 adult chinook returning to the Clearwater in 1988 was the third highest number since counts began in 1950.

Table 7. Spring chinook counts over Lewiston Dam (1950-1972), with present estimates (1973-1988).

Year	April	May	June	July	August	Total
1950	--	--	1	6	2	9
1951	--	--	15	12	8	35
1952	--	--	7	7	--	14
1953		5	23	35	3	66
1954	--	--	2	15	1	18
1955	--	--	4	6	3	13
1956	--	2	7	4	1	14
1957	--	11	42	98	--	151
1958	--	--	11	11	1	23
1959	--	--	5	3	2	10
1960	--	14	15	14	--	43
1961	2	24	82	28	--	136
1962	--	1	6	5	1	13
1963	--	--	5	--	--	5
1964	--	--	33	31	2	66
1965	--	112	124	82	--	318
1966	3	75	148	129	--	355
1967	4	39	131	252	2	428
1968	--	186	261	528	15	990
1969	1	697	1,742	103	4	2,547
1970	87	427	562	620	4	1,700
1971	--	107	801	1,277	2	2,187
1972	1	172	2,060	1,199	35	3,467

	LEWISTON DAM REMOVED				
	Regression estimate	KNFH rack return	DNFH rack return	Red River estimates	
1973	5,676	50			5,726
1974	2,074	37			2,111
1975	1,647	221			1,868
1976	2,544	801			3,345
1977[a]	4,735	3,023			7,758
1978	4,618	2,045			6,663
1979	1,191	382			1,573
1980	2,059	68			2,127
1981	3,309	268			3,577
1982[b]	1,985	255		547	2,787
1983[b]	1,250	365		663	2,278
1984[b]	1,603	343	82	602	2,630
1985[b]	2,074	536	334	765	3,709
1986[b]	1,735	281	516	534	3,066
1987[b]	1,912	687	2,017	519[c]	5,135
1988[b]	2,559	595	1,972	394	5,520

[a]lncludes 1,200 adults transported from KNFH to S. Fk. Clearwater and Lochsa drainages.
[b]Red River redd counts were not included in the regression estimates.
[c]Actual numbers trapped at new weir.

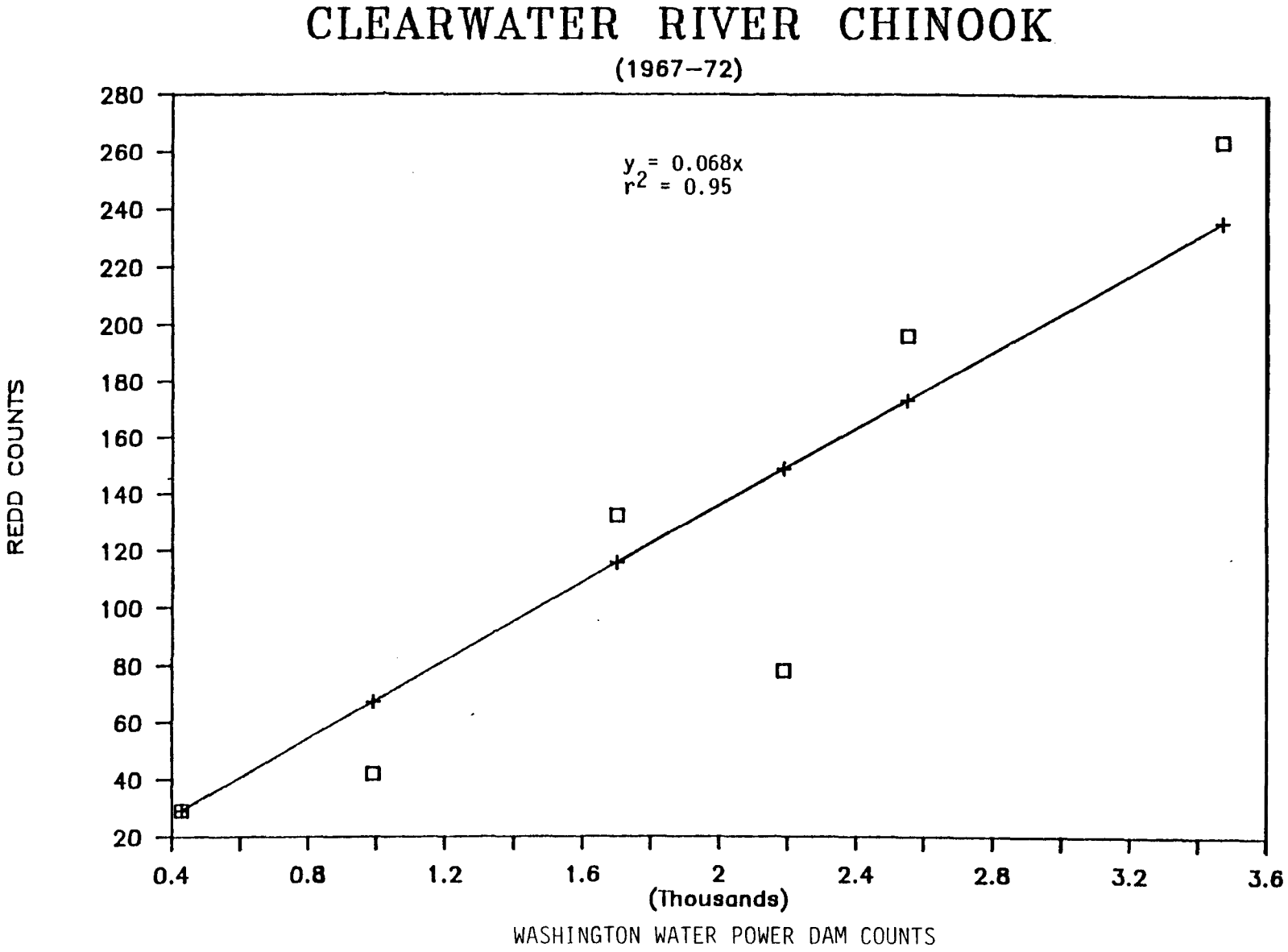

Figure 1. Regression analysis of chinook salmon redd counts vs. WWP dam counts from the Clearwater River drainage, 1967-1972.

Appendix A

Summary of salmon and steelhead fry-fingerlings, smolts, and adults released into the Clearwater River drainage between 1971-1988.

Table 1. Summary of spring chinook fry, fingerlings, and smolts released from Kooskia National Fish Hatchery, 1971 to 1988.

Release year	Number of smolts	Release site	Number of fry or fingerlings	Release site
1971	151,667	Clear Cr.		
	25,403	Lochsa R.		
1972	248,302	Clear Cr.	75,790	Clear Cr.
			327,831	Lochsa R.
			427,831	S. Fk. Clearwater R.
1973	356,190	Clear Cr.	256,396	Lochsa R.
1974	303,803	Clear Cr.		
1975	802,165	Clear Cr.	1,400	
1976	1,299,865	Clear Cr.	71,000	Clear Cr.
1977	140,000	Clear Cr.	900,200	Clear Cr.
	360,630	Clearwater R.(Lewiston)		
1978	297,987	Clear Cr.	871,543	Clear Cr.
	73,234	Clearwater R.(Lewiston)		
	64,865	Lochsa R.		
1979	301,029	Clear Cr.	666,544	Clear Cr.
1980	766,946	Clear Cr.		
1981	382,720	Clear Cr.	571,664	Clear Cr.
1982	584,044	Clear Cr.		
1983	244,083	Clear Cr.	217,186	Clear Cr.
1984	299,176	Clear Cr.	56,683	Clearwater R.
	82,377	Dworshak Hatch.	267,406	M. Fk. Clearwater R.
1985	301,753	Clear Cr.		
1986	351,405	Clear Cr.		
1987	765,900	Clear Cr.		
1988	778,407	Clear Cr.		
TOTALS	8,979,951		4,711,208	

Table 2. Summary of spring chinook fry, fingerlings, and smolts released from Dworshak National Fish Hatchery, 1981 to 1988.

Release *year*	Number of smolts	Release site	Number of fry or fingerlings	Release site
1981'	174,517	Clear Cr.		
1982	127,289	Clear Cr.		
	28,100	N. Fk. Clearwater R.		
1983	412,578	Clear Cr.		
	49,055	main stem Clearwater R.		
	547,027	N. Fk. Clearwater R.		
1984	221,501	Clear Cr.	153,163	Clear Cr.
	259,589	N. Fk. Clearwater R.	520,889	N. Fk. Clearwater
1985	1,137,139	N. Fk. Clearwater R.	3,000	N. Fk. Clearwater
1986	506,320			
1987	1,710,710	main stem Clearwater R.	192,330	main Clearwater
1988	1,132,152	N. Fk. Clearwater R.	414,827	N. Fk. Clearwater
TOTALS	6,305,977		1,324,209	

Table 3. Spring chinook fry-fingerlings and smolts released into Lolo Creek drainage, 1972 to 1988.

Year	Release date	Release site	Number of fry-fingerlings	Egg source
1972	None			
1973	None			
1974	None			
1975	None			
1976	None			
1977	6/13	Lolo Cr.	104,500 (190/lb.)	Rapid R.
1978	None			
1979	None			
1980	None			
1981	None			
1982	None			
1983	None			
1984	None			
1985	None			
1986	4/25-5/7	Eldorado Cr.	268,527	Rapid R.
1987	5/12	Lola Cr.	133,158	
	5/12	Eldorado Cr.	119,090	
1988	5/5	Lolo Cr.	103,800	Rapid R.
	5/5	Eldorado Cr.	53,200	Rapid R.
	5/25	Lolo Cr.	43,722	DNFH
TOTALS			825,997	

Table 4. Spring chinook fry-fingerlings and smolts released into the Lochsa River drainage, 1972 to 1988.

Year	Release date	Release site	Number of fry-fingerlings	Number of smolts	Egg source
1972	4/19	Lochsa R.-Green Flat	122,760		KNFH
	4/19	Post Office Cr.	82,045		KNFH
	4/19	Wendover Cr.	122,760		KNFH
	6/26	Brushy Fork	59,600		Rapid R.
	6/26	Papoose Cr.	14,900		Rapid R.
	6/26	Squaw Cr.	44,700		Rapid R.
	6/26	Post Office Cr.	14,900		Rapid R.
	6/26	Fish Cr.	44,700		Rapid R.
		Subtotal	506,365		
1973	4/10	White Sand Cr.		60,000	Rapid R.
	4/11	Squaw Cr.		30,000	Rapid R.
	4/11	Post Office Cr.		25,000	Rapid R.
	6/5	Post office Cr.	100,000		KNFH
	6/5	Wendover Cr.	100,000		KNFH
	6/5	Lochsa R.-Green Flat	56,396		KNFH
		Subtotal	256,396	115,000	
1974	None				
1975	3/25	White Sand Cr.		48,600 (27/lb.)	Rapid R.
	3/26	Boulder Cr.		48,600 (27/lb.)	Rapid R.
	3/27	White Sand Cr.		83,600 (27/lb.)	Rapid R.
		Subtotal		180,800	
1976	4/27-5/5	White Sand Cr.		166,750 (23/lb.)	Rapid R.
1977	4/5-7	White Sand Cr.		183,600	Rapid R.
	6/8-7/19	Brushy Fork Cr.	568,100		Rapid R.
		Crooked Fork Cr.	193,600		Rapid R.
		Subtotal	761,700	183,600	
1978	4/19-25	White Sand Cr.		115,200	Rapid R.
	6/7	Squaw Cr.	119,500		Rapid R.
	6/7	Post Office Cr.	119,500		Rapid R.
	7/6	Crooked Fork Cr.	270,000		Rapid R.
	7/7	Brushy Fork Cr.	270,000		Rapid R.
	8/8	Lochsa R.	148,500		Rapid R.
	8/8	Squaw Cr.	71,500		Rapid R.
		Subtotal	999,000	115,200	

Table 4. Continued.

Year	Release date	Release site	Number of fry-fingerlings	Number of smolts	Egg source
1979	4/18-26	White Sand Cr.	153,362		Rapid R.
1980	None				
1981	None				
1982	None				
1983	None				
1984	None				
1985	None				
1986	5/8	Crooked Fork	199,566		Rapid R.
	5/8	White Sand	70,435		Rapid R.
	6/27	Brushy Fork	115,352		Rapid R.
	10/7-10/14	White Sand		348,420	Rapid R.
1987	3/16	White Sand Cr.		245,000	Rapid R.
	3/18	White Sand Cr.		99,900	Rapid R.
	5/7	Crooked Fork	348,600		Rqpid R.
	5/8	White Sand Cr.	202,400		Rapid R.
	5/8	Big Flat Cr.	98,000		Rapid R.
1988	3/17	White Sand Cr.		200,105	DNFH
	5/10	Crooked Fork	200,000		Rapid R.
	5/11	White Sand Cr.	127,800		Rapid R.
	5/11	Big Flat Cr.	72,200		Rapid R.
	6/2	Brushy Fk. Cr.	202,000		Rapid R.
	6/14	White Sand Cr.	100,200		Rapid R.

Table 5. Chinook fry-fingerlings and smolts released into the South Fork Clearwater drainage (excluding Red River pond), 1972 to 1988.

Year	Release date	Release site	Number of fry-fingerlings	Number of smolts	Egg source
1972	6/26	Ten Mile Cr.	29,800		Rapid R.
	6/26	American River	44,700		Rapid R.
	6/26	Red River	104,300		Rapid R.
	4/18	Newsome Cr.	126,360		KNFH
	4/18	Red River	298,511		KNFH
	4/18	American River	65,000		KNFH
		Subtotal	668,671		
1973	4/2-3	Red River		120,160	Rapid R.
	4/3	Newsome Cr.		33,772	Rapid R.
	4/3	American River		33,772	Rapid R.
	4/3	Crooked River		9,599	Rapid R.
		Subtotal		197,303	
1974	6/19-20	Ten Mile Cr.	86,000		Rapid R.
	6/19	Newsome Cr.	18,000		Rapid R.
		Subtotal	104,000		
1975	4/9	Newsome Cr.		40,950(19.5/lb.)	Rapid R.
	4/9	Crooked River		40,950(19.5/lb.)	Rapid R.
	4/10	So. Fk. Clearwater R.		11,700(19.5/lb.)	Rapid R.
	4/10	Red River		23,400(19.5/lb.)	Rapid R.
		Subtotal		117,000	
1976	4/13-14	Red River		66,600(20/lb.)	Rapid R.
	4/14	So. Fk. Clearwater R.		30,100(17/lb.)	Rapid R.
	4/14-15	Crooked River		53,100(20/lb.)	Rapid R.
	4/15	Newsome Cr.		56,100(17/lb.)	Rapid R.
		Subtotal		205,300	
1977	3/29	Newsome Cr.		31,500	Rapid R.
	3/29-30	Red River		43,500	Rapid R.
	3/30	Crooked River		63,000	Rapid R.
	3/31-4/2	So. Fk. Clearwater R.		111,750	Rapid R.
		Subtotal		249,750	
1978	4/25	Red River		33,600	Rapid R.
	7/11	Newsome Cr.	76,500		Rapid R.
	7/11	Ten Mile Cr.	103,500		Rapid R.
		Subtotal	180,000	33,600	
1979	4/24	Newsome Cr.		44,373	Rapid R.

Table 5. Continued.

Year	Release date	Release site	Number of fry-fingerlings	Number of smolts	Egg source
1980	None				
1981	None				
1982	None				
1983	None				
1984	None				
1985	None				
1986	4/24-28	Crooked River	220,140		Rapid R.
	6/24		49,437		Rapid R.
	6/25-28	Newsome Creek	102,282		Rapid R.
	10/8	Red River		96,400	Sawtooth
	10/8-15	Crooked River		251,300	Sawtooth
1987	3/16	Crooked River		122,500	Rapid R.
	3/18	Red River		98,800	Rapid R.
	3/18	Crooked River		105,000	Rapid R.
1988	5/12	American River	113,800		Rapid R.
	5/12	Newsome Creek	112,100		Rapid R.
	5/13	Meadow Creek	100,100		Rapid R.
	5/13	Crooked River	200,100		Rapid R.
	5/16	Red River	50,100		Rapid R.
	5/24	American River	81,542		DNFH
	5/24	Newsome Creek	84,766		DNFH
	6/10	Ten Mile Creek	150,100		Rapid R.

Table 6. Steelhead fry, smolts, and adults released into the Lochsa River drainage, 1973 to 1988. All fish were of DNFH origin.

Year	Release date	Release site	Number of fry	Number of smolts	Number of adults
1973	5/15	Lochsa River		1,200 (11/lb.)	
	6/12	Brushy Fork Cr.	374,195		
	6/12	Crooked Fork Cr.	374,195		
		Subtotal	748,390	1,200	
1974	5/13-16	Lochsa River			697
	7/2	Post Office Cr.	50,000		
	7/2	Squaw Cr.	100,000		
	7/2	Papoose Cr.	100,000		
	7/2	White Sand Cr.	100,000		
		Subtotal	350,000		697
1975			0		
1976			0		
1977	6/23	Post Office Cr.	90,000		
	6/24	Weir Cr.	90,000		
	6/24	Deadman Cr.	90,000		
		Subtotal	270,000		
1978	6/12	Pete King Cr.	150,000		
	6/12	Canyon Cr.	150,000		
	6/12	Deadman Cr.	300,000		
	6/13	Spruce Cr.	300,000		
	6/14	Squaw Cr.	150,000		
	6/15	Post Office Cr.	150,000		
	6/16	Shotgun Cr.	300,000		
	6/16	Papoose Cr.	200,000		
		Subtotal	1,700,000		
1979	6/11	Pete King Cr.	80,000		
	6/11	Fish Cr.	80,000		
	6/11	Post Office Cr.	80,000		
	6/11	Squaw Cr.	80,000		
	6/11	Badger Cr.	41,000		
	6/11	Crooked Fork	80,000		
	6/21	Brushy Fork	350,000		
	6/21	Pack Creek	50,000		
		Subtot	841,000		

Table 6. Continued.

Year	Release date	Release site	Number of fry	Number of smolts	Number of adults
1980	4/11-19	Lochsa River			445
	6/17	Lochsa River	500,000		
	7/7	Brushy Fork Cr.	314,985		
	9/24	White Sands Cr.	45,000		
	9/25	Pete King Cr.	30,000		
	9/24	Fish Cr.	20,000		
	9/24	Post Office Cr.	30,000		
	9/24	Squaw Cr.	25,000		
	9/24	Badger Cr.	23,000		
	9/24	Papoose Cr.	20,000		
		Subtotal	1,007,985		445
1981	3/25-26	Post Office Cr.			162
	3/31	Squaw Cr.			86
	6/2	Squaw Cr.	240,000		
	6/8	Papoose Cr.	340,000		
	6/9	Pete King	140,500		
	6/9	Post Office	140,500		
	6/15	Brushy Fork	60,000		
	6/15	Badger Cr.	60,000		
	6/22	White Sand Cr.	356,000		
	6/29	Brushy Fork Cr.	250,000		
		Subtotal	1,587,000		248
1982	6/16	Pete King Cr.	58,000		
	6/16	Squaw Cr.	100,000		
	6/16	Badger Cr.	58,000		
		Subtotal	216,000		
1983			NONE		
1984			NONE		
1985			NONE		
1986			NONE		
1987			NONE		
1988			NONE		

Table 7. Steelhead fry, smolts, and adults released into the South Fork Clearwater River drainage, 1971 to 1988. All fish were of DNFH origin.

Year	Release date	Release site	Number of fry	Number of smolts	Number of adults
1971	7/14	Crooked River	256,000		
		Subtotal	256,000		
1972			NONE		
1973	4/20-5/3	S. F. Clearwater drainage	1,365,000	(55/lb.)	
	10/25	S. F. Clearwater	217,800		
		Subtotal	1,582,800		
1974	7/1	Mill Cr.	100,000		
	7/1	Newsome Cr.	100,000		
	7/1	Crooked River	200,000		
		Subtotal	400,000		
1975			NONE		
1976			NONE		
1977	6/3	Meadow Cr.	712,000		
	6/9	Red River	275,000		
	6/9	Crooked River	275,000		
	6/27	S. F. Clearwater	330,000		
	6/29	Tenmile Cr.	300,000		
		Subtotal	1,892,000		
1978	4/17	S. F. Clearwater			800
	4/21	Newsome Cr.			400
	4/27	Newsome Cr.			272
	4/28	Crooked River			200
	5/1	Red River			350
	5/3	Crooked River			460
	6/6	Meadow Cr.	500,000		
	6/7	Leggett Cr.	100,000		
	6/7	Crooked River	300,000		
	6/7	Newsome Cr.	125,000		
		Subtotal	1,025,000		2,482

Table 7. Continued.

Year	Release date	Release site	Number of fry	Number of smolts	Number of adults
1979	4/12	Newsome Cr.			250
	6/4	Meadow Cr.	280,000		
	6/18	Leggett Cr.	100,000		
	6/18	Newsome Cr.	100,000		
	6/18	Crooked River	100,000		
	6/18	Red River	100,000		
	6/18	American River	100,000		
	6/25	Johns Cr.	420,000		
		Subtotal	1,200,000		250
1980	6/18	S. F. Clearwater	500,000		
	7/3	Meadow Cr.	271,400		
		Subtotal	771,400		
1981	4/27	S. F. Clearwater (Mt Idaho)		215,675	
	4/28	S. F. Clearwater (Mt Idaho)		145,362	
	4/29	S. F. Clearwater (Mt Idaho)		72,435	
		Subtotal		433,472	
	5/27	Leggett Cr.	30,000		
	5/27	Newsome Cr.	100,000		
	5/27	Crooked River	100,000		
	5/28	Red River	100,000		
	5/28	American River	100,000		
		Subtotal	430,000		
1982	5/4	S. F. Clearwater (Mt Idaho)		137,875	
	5/5	S. F. Clearwater (Mt Idaho)		104,416	
	5/6	S. F. Clearwater (Mt Idaho)		139,520	
		Subtotal		381,811	
1983	5/9	S. F. Clearwater (Mt Idaho)		101,289	
	5/10	S. F. Clearwater (Mt Idaho)		104,685	
	5/11	S. F. Clearwater (Mt Idaho)		96,734	
	5/12	S. F. Clearwater (Mt Idaho)		92,676	
	5/13	S. F. Clearwater (Mt Idaho)		101,087	
		Subtotal		496,471	

Table 7. Continued.

Year	Release date	Release site	Number of fry	Number of smolts	Number of adults
1984	4/30	S. F. Clearwater (Mt. Idaho)		115,766	
	5/1	S. F. Clearwater (Mt. Idaho)		66,988	
	5/2	S. F. Clearwater (Mt. Idaho)		46,088	
		Subtotal		228,842	
1985	4/3-17	American River			1,891
	4/18-5/2	Newsome Cr.			2,043
	4/24-5/2	Crooked River			2,030
	4/29-30	American River		138,077	
	4/29-30	Crooked River		18,508	
	5/1	American River		24,034	
	5/1	Crooked River		15,962	
	5/1	Crooked River		7,765	
	5/1-2	Newsome Cr.		95,286	
		Subtotal		299,632	
1986	4/14-23	American River		189,307	
	4/16	Elk Creek		48,388	
	4/15-18	Crooked River		140,823	
	4/17-30	Newsome Cr.		212,188	
	4/30	Legget Cr.		8,904	
	4/17-28	S. F. Clearwater (Mt. Idaho)		755,698	
	6/26	Crooked River	87,750		
1987	4/6-15	Crooked River			759
	4/13-17	Crooked River		165,934	
	4/13-17	main stem South Fk.		298,070	
	4/29	main stem South Fk.			45
	4/14-17	American River		41,327	
	4/14-17	Newsome Creek		171,768	
1988	4/19	Crooked River		201,325	
	4/20	Newsome Creek		190,708	
	4/20-25	American River		56,885	540
	4/28	main stem South Fk.		165,055	

Table 8. Steelhead smolts released into Clear Creek, 1978 to 1988. All fish were of DNFH origin.

Year	Release date	Release site		Number of smolts	Number/ pound
1978	4/11	Clear Cr.		176,714	11.0
	4/19	Clear Cr.		9,800	9.8
			Subtotal	186,514	
1979					
1980					
1981	4/29	Clear Cr.		73,213	8.1
			Subtotal	73,213	
1982					
1983	5/11	Clear Cr.		94,530	6.5
	5/12	Clear Cr.		97,239	6.5
	5/13	Clear Cr.		58,659	7.0
			Subtotal	250,428	
1984	5/3	Clear Cr.		246,123	5.5
			Subtotal	246,123	
1985	4/30-5/1	Clear Cr.		145,206	9.3
			Subtotal	145,206	
1986	4/22-29	Clear Cr.		165,483	6.6
			Subtotal	165,483	
1987	4/13-17	Clear Cr.		156,522	5.0
1988	4/22	Clear Cr.		254,898	5.7

Table 9. Steelhead fry, smolts, and adults released into the Lolo Creek drainage, 1974 to 1988. All fish were of DNFH origin.

Year	Release date	Release site	Number of fry	Number of smolts	Number of adults
1974	12/4	Musselshell Cr.			
	5/8	Musselshell Cr.		101,995	
	5/9	Lolo Cr.			400
	5/10	Lolo Cr.			407
		Subtotal	230,335	101,995	807
1975					
1976					
1977	6/10	Lolo Cr.	300,000		
		Subtotal	300,000		
1978	4/6	Lolo Cr.			600
	4/20	Lolo Cr.			800
	6/5	Lolo Cr.	520,000		
		Subtotal	520,000		1,400
1979	6/11	Lolo Cr.	379,236		
		Subtotal	379,236		
1980	4/26	Lolo Cr.			165
	5/15	Lolo Cr.	100,000		
	9/25	Lolo Cr.	40,000		
		Subtotal	140,000		165
1981					
1982					
1983	4/12	Lolo Cr.			150
	5/26	Eldorado Cr.	625,000		
		Subtotal	625,000		150

Table 9. Continued.

Year	Release date	Release site	Number of fry	Number of smolts	Number of adults
1984					
1985	4/17-19	Eldorado Cr.			1,150
	4/29-30	Eldorado Cr.		76,348	
	5/1	Eldorado Cr.		44,936	
		Subtotal		121,284	1,150
1986	3/28	Eldorado Cr.			155
	4/21-29	Eldorado Cr.		204,362	
1987	9/15	Lolo Creek	114,800		
1988	4/22	Eldorado Cr.		200,806	
	4/27	Lolo Cr.		36,350	

Table 10. Steelhead fry, smolts, and adults released into the Potlatch Creek drainage, 1977 to 1987. All fish were of DNFH origin.

Year	Release date	Release site	Number of fry	Number of smolts	Number of adults
1977	5/19	E. Fk. Potlatch Cr.	186,192		
	6/30	E. Fk. Potlatch Cr.	170,000		
	6/30	Potlatch	175,000		
		Subtotal	531,192		
1978	4/24	Potlatch Cr.			200
	4/5	Potlatch Cr.			280
		Subtotal			480
1979	5/4	Potlatch Cr.	170,000		
		Subtotal	170,00u		
1980	5/14	Potlatch Cr.	125,000		
		Subtotal	125,000		
1981	5/26	**E.** Fk. Potlatch Cr.	100,000		
		Subtotal	100,000		
1982					
1983	4/15	Potlatch Cr.			81
	4/19	Potlatch Cr.			71
		Subtotal			152
1984					
1985	3/27	Cedar Cr.			402
	3/28	E. Fk. Potlatch Cr.			383
	4/3	Little Boulder Cr.			408
		Subtotal			1,193
1986			NONE		
1987			NONE		
1988			NONE		

Appendix B

Summary of salmon and steelhead eyed eggs placed into the Clearwater River drainage between 1961-80.

Eyed Egg Plants, 1961-1980

Spring Chinook

The initial reintroduction of spring chinook in the Clearwater River drainage began in 1961 when eyed spring chinook eggs were placed in trenches dug in the gravel in the Selway River above the Little Clearwater River and in Bear Creek. From 1961-1964, a total of 3,741,864 eyed eggs from Salmon River spring chinook were placed in the Selway River. During the same time interval, 3,569,000 eyed spring chinook eggs from the Carson National Hatchery were placed in Bear Creek (Table 1).

In 1964, an incubation channel was constructed on Running Creek, another Selway River tributary. From 1964-1969, a total of 2,445,257 eyed spring chinook eggs from the Carson National Hatchery were placed in the Running Creek channel. In 1970, the last year the channel was used, 500,714 eyed eggs from Rapid River Hatchery were used. Emergence percentages during the years fry were enumerated ranged from 18 to 79% (Table 2).

In 1966, another Selway tributary incubation channel was constructed on Ditch Creek. From 1966-1968, a total of 1,703,590 eyed spring chinook eggs from Carson National Hatchery were placed in the Ditch Creek channel. In 1970, the last year the channel was used, 550,600 eyed eggs from Rapid River Hatchery were planted. Emergence percentages during the three years of enumeration ranged from 26 to 1002 (Table 3).

An incubation channel was also constructed at Indian Creek, another Selway River tributary, in 1966. From 1966 to 1979, a total of 28,330,655 eyed spring chinook eggs were placed in the channel. A total of 11,136,142 fry were enumerated from the channel during the interval of 1966-1978. Emergence percentage ranged from 17 to 74% and averaged 442 (Table 4). Fry were distributed to various locations in the Selway drainage (Tables 5-15).

Red River Incubation Channel was originally constructed in 1964 and utilized for incubation of steelhead and coho eggs from 1964-1969, but was used for spring chinook eggs from 1970-1976. During five years, a total of 5,159,345 eyed spring chinook eggs were planted. No eggs were available for this channel in 1971 and 1974 (Table 16). Emergent fry migrated directly into Red River without enumeration (Table 17).

Crooked River Incubation Channel was originally constructed in 1966 and utilized for coho and steelhead eggs from 1966-1968, but was used for spring chinook eggs from 1970-1978. The channel was filled in and leveled with a bulldozer in 1979. From 1970-1978 a total of 9,323,468 eyed spring chinook eggs were placed in the channel (Table 18). No eggs were available in 1974. Some limited fry trapping and distribution to Newsome Creek occurred in 1971, 1972 and 1974 (Table 19).

Totaling all five channels, plus the eggs placed in the Selway River and Bear Creek, approximately 55,000,000 eyed spring chinook eggs were planted in the Clearwater Drainage between 1961 and 1980.

Coho

Red River Incubation Channel utilized a total of 2,780,250 eyed coho eggs in 1963, 1964, and 1965. Emergence percentages ranged from 55 to 59.7% (Table 17).

Crooked River Incubation Channel utilized a total of 8,066,000 eyed coho eggs in 1966, 1967 and 1968. Emergence percentages ranged from 16 to 26%. The coho program was terminated in 1969 (Table 19).

Steelhead

Red River Incubation Channel utilized a total of 3,738,874 steelhead eggs from 1962-1969. All eggs were taken at the old Lewiston Dam (Table 16). Emergence percentages ranged from 74 to 852 (Table 17). From 1970-1976, the channel was used for spring chinook eggs. During 1978 and 1979, steelhead eggs were again placed in the channel (Table 16).

In 1966, a total of 480,598 steelhead eggs were placed in Crooked River Channel (Table 18). The emergence percentage that year was 91% (Table 19). This was the only year steelhead eggs were placed in this channel.

Fall Chinook

An incubation channel near Fenn Ranger Station on the lower Selway River was utilized for fall chinook eyed eggs from 1960-1967. During that time, a total of 6,733,000 eyed eggs were planted. These eggs were obtained from Spring Creek Hatchery on the lower Columbia River. No eggs were available in 1965. Due to poor adult returns, the program was terminated in 1968 (Table 20).

Table 1. Summary of spring chinook eyed egg plants into the upper Selway River and Bear Creek, 1961-1964.

Year	Location planted	Number of eggs planted	Egg source
1961	Selway River above Little Clearwater	845,000	Salmon River
	Bear Creek	610,000	Carson National
1962	Selway River above Little Clearwater	1,111,000	Salmon River
	Bear Creek	959,000	Carson National
1963	Selway River above Little Clearwater	860,000	Salmon River
	Bear Creek	1,000,000	Carson National
1964	Selway River above Little Clearwater	925,864	Salmon River
	Bear Creek	1,000,000	Carson National

Table 2. Summary of spring chinook eyed egg plants and emergent fry, Running Creek Incubation Channel, 1964-1970.

Year	Number of eggs planted	Number of fry emerging	Percent emergence	Egg source
1964	285,162			Adults trapped at Bonneville
1965	634,943	156,307	55	and eggs taken at Carson
1966	405,400	200,000	31	National Hatchery
1967	427,300	73,028[1/]	18	" "
1968	450,000	159,000[1/]	37	" "
1969	242,453	353,097	79	" "
1970	500,714	Not enumerated		Rapid River
1971		Not enumerated		
Total	2,945,972			

The channel was constructed in 1964 and egg plants were discontinued in 1971.

[1/]Flooding and/or debris problems at headgate.

Table 3. Summary of spring chinook eyed egg plants and emergent fry, Ditch Creek Incubation Channel, 1966-1970.

Year	Number of eggs planted	Number of fry emerging	Percent emergence	Egg source
1966	612,800			Carson National (adults trapped at Bonneville)
1967	589,000	594,337	97	" "
1968	501,790	598,000	100+	" "
1969	None	130,033	26	
1970	550,600	--		Rapid River
1971	None	Not enumerated		
Total	2,254,190			

The channel was constructed in 1966 and egg plants were discontinued in 1971.

Table 4. Summary of spring chinook eyed egg plants and emergent fry, Indian Creek Incubation Channel, 1966-1979.

Year	Number of eggs planted	Number of fry emerging	Percent emergence	Egg source
1966	1,010,487			Salmon River (Bear Valley, Decker, Lemhi)
1967	998,160	424,623	42	Salmon River
1968	2,729,100	743,000	74	Salmon River
1969	1,125,136	1,221,696	45	Salmon River and Carson Natl.
1970	2,215,941	405,682	36	Rapid River
1971	1,623,080	839,716	38	Carson National
1972	2,956,179	524,710	32	Rapid River
1973	2,029,316	1,613,550	55	Rapid River
1974	2,207,000	962,335	48	Cowlitz Hatchery
1975	2,406,731	770,000	35	Rapid River
1976	1,613,383	400,000	17	Rapid River
1977	2,740,470	723,960	45	Rapid River
1978	2,135,672	1,458,980	53	Rapid River
1979	2,540,000	1,047,890	49	Cowlitz Hatchery

Table 5. Indian Creek Hatching Channel spring chinook fry distribution, 1969.

Release dates	Water	Release site	Number of fry
May 13	Selway River	Magruder R.S.	39,500
May 14	Selway River	Magruder R.S.	23,000
May 20	Deep Creek	Scattered locations	59,500
May 24	Selway River	Magruder R.S.	71,500
May 27	Deep Creek	Scattered locations	123,000
June 2	Selway River	Paradise G.S.	250,000
June 4	Selway River	Paradise G.S.	46,000
June 4	White Cap Creek	5 miles up	109,000
June 7	Selway River	Magruder R.S.	44,500
June 9	White Cap Creek	10 miles up	126,000
June 9	Selway River	Paradise G.S.	103,000
June 19	Selway River	Paradise G.S.	10,000
June 19	White Cap Creek	15 miles up	90,000
April-June	Selway River	At the channel	126,696
		Approximate total	1,221,696

Table 6. Indian Creek Hatching Channel spring chinook fry transplants, 1970.

Release dates	Water	Release site	Number of fry
May 20	Selway River	Magruder R.S.	25,800
June 3	Deep Creek	At Scimitar Creek	15,280
June 3	Deep Creek	At Hell's Half Acre Bridge	16,160
June 10	Selway River	Beaver Point	15,825
June 10	White Cap Creek	Paradise G.S.	15,300
June 24	Storm Creek	Storm Creek Flat	76,160
June 24	White Cap Creek	Cooper Flat	76,160
June 24	Selway River	Beaver Point	13,680
June 24	Selway River	Magruder R.S.	13,680
May-June	Selway River	At Channel	107,637
		Approximate Total	375,682

Table 7. Chinook salmon fry transplants from Indian Creek Hatching Channel, 1971.

Release dates	Water	Release site	Number of fry
May 27	Selway River	Beaver Point	76,456
May 29	White Cap Creek	Paradise G.S.	112,044
June 4	Selway River	Magruder R.S.	50,687
June 10	Deep Creek	Cayuse Creek	63,634
June 17	Selway River	Magruder R.S.	134,005
June 22	Storm Creek	Storm Creek Flat	104,880
June 24	Storm Creek	Storm Creek Flat	110,400
June 25	White Cap Creek	Paradise G.S.	104,448
July 3	Selway River	Beaver Point	83,162
		Approximate Total	839,716

Table 8. Indian Creek Hatching Channel spring chinook fry transplants, 1972.

Release dates	Water	Release site	Number of fry
June 2	White Cap Creek	Paradise G.S.	21,660
June 2	Selway River	Magruder R.S.	21,280
June 6	Selway River	Beaver Point	24,320
June 6	Deep Creek	Scimitar Creek	24,320
June 6	Deep Creek	Cayuse Creek	30,400
June 6	Selway River	Magruder Crossing	24,320
June 12	White Cap Creek	Paradise G.S.	31,680
June 12	Deep Creek	Hell's Half Acre	22,140
June 20	Selway River	Magruder Crossing	38,000
June 20	Selway River	Magruder Mountain	38,000
June 20	White Cap Creek	Cooper's Flat	50,400
June 27	Deep Creek	Gabe Creek	35,700
June 27	Storm Creek	Storm Creek Flat	107,665
June 30	Moose Creek		54,825
		Approximate Total	524,710

Table 9. Indian Creek hatching channel chinook fry transplants through June 20, 1973.

Release dates	Water	Release site	Number of fry
May 16	Selway River	Beaver Point	47,250
May 16	Selway River	Magruder R.S.	48,600
May 18	Storm Creek	Storm Creek Flat	200,000
May 18	White Cap Creek	Cooper's Flat	180,000
May 18	Selway River	Washout Creek	16,000
May 18	Selway River	Beaver Point	36,000
May 24	Moose Creek	Elbows Bend	146,200
May 24	Selway River	Beaver Point	36,000
May 26	White Cap Creek	Paradise G.S.	63,000
May 26	Deep Creek	Gabe Creek	69,300
May 27	Deep Creek	Kit Carson	50,400
May 28	White Cap Creek	Paradise G.S.	37,800
May 29	Selway River	Magruder R.S.	53,650
May 29	Selway River	Magruder Crossing	50,400
June 2	White Cap Creek	Paradise G.S.	75,600
June 2	Selway River	Magruder Crossing	50,400
June 2	Selway River	Beaver Point	63,000
June 3	Selway River	Magruder R.S.	50,400
June 3	Deep Creek	Scimitar Creek	78,750
June 5	Deep Creek	Kit Carson	44,100
June 6	Selway River	Beaver Point	50,500
June 6	Selway River	Magruder R.S.	34,650
June 9	White Cap Creek	Paradise G.S.	40,950
June 9	Selway River	Magruder R.S.	12,600
June 9	Deep Creek	Gabe Creek	31,500
June 9	Deep Creek	Scimitar Creek	22,050
June 9	Deep Creek	Kit Carson	9,450
June 11	Selway River	Magruder R.S.	46,000
		Approximate Total	1,644,550

Table 10. Indian Creek hatching channel chinook fry transplants, 1972.

Release dates	Water	Release site	Number of fry
May 9	White Cap Creek	Paradise G.S.	50,000
May 9	Selway River	Magruder R.S.	50,000
May 10	Deep Creek	Pete Creek	50,000
May 13	Selway River	Beaver Point	50,000
May 13	Deep Creek	Gabe Creek	50,000
May 23	Wilkerson Creek	Storm Creek	100,000
May 24	White Cap Creek	Cooper's Flat	40,000
May 30	White Cap Creek	3 miles above Cooper's Flat	100,000
May 30	Moose Creek	4 miles above Elbows Bend	90,000
June 11	Deep Creek	Scimitar Creek	43,050
May & June	Selway River	At hatching channel	339,285
		Approximate Total	962,335

Table 11. Indian Creek Hatching Channel chinook fry transplants, 1975.

Release dates	Water	Release site	Number of fry
May 29	Storm Creek	Storm Creek Flat	77,435
May 29	Selway River	Magruder Crossing	9,265
June 4	White Cap Creek	Cooper's Flat	84,000
June 4	Selway River	Magruder R.S.	12,000
June 17	Deep Creek	Hell's Half Acre Bridge	16,300
June 26	Deep Creek	Pete Creek	19,000
July 5	Selway River	Magruder Crossing	7,000
May & June	Selway River	At hatching channel	84,000
		Approximate Total	309,000

Table 12. Indian Creek Hatching Channel chinook fry transplants, 1976.

Release dates	Water	Release site	Number of fry
May 21	White Cap Creek	Paradise	30,240
May 21	Selway River	Beaver Point	40,320
May 21	Selway River	Magruder Crossing	44,640
May 21	Deep Creek	Cayuse Creek	10,080
May 21	Selway River	Magruder R.S.	44,550
May 28	Storm Creek	Storm Creek Flat	62,910
May 28	White Cap Creek	Cooper's Flat	66,060
May & June	Selway River	At hatching channel	53,220
		Approximate Total	352,020

Table 13. Indian Creek Hatching Channel chinook fry transplants, 1977.

Release dates	Water	Release site	Number of fry
May 15	Selway River	At hatching channel	76,840
May 20	Selway River	Magruder Crossing	36,770
May 24	White Cap Creek	Paradise	60,920
May 30	Deep Creek	Cayuse Creek	31,514
May 30	Deep Creek	Gabe Creek	31,514
May 30	Selway River	Magruder R.S.	31,514
June 1	Selway River	Magruder Crossing	12,960
June 4	Selway River	Beaver Point	31,280
June 4	Selway River	Magruder Crossing	31,280
June 6	Selway River	At hatching channel	10,500
June 7	White Cap Creek	Cooper's Flat	82,600
June 7	Storm Creek	Storm Creek Flat	82,600
June 7	Selway River	At hatching channel	42,000
June 14	Selway River	Magruder Crossing	33,000
June 14	Selway River	Beaver Point	33,000
June 14	Selway River	Magruder R.S.	11,900
June 20	Selway River	At hatching channel	6,700
		Approximate Total	646,892

Table 14. Indian Creek Hatching Channel chinook fry transplants, 1978.

Release dates	Water	Release site	Number of fry
April 27	Selway River	At hatching channel	26,480
May 4	Selway River	Magruder Crossing	28,600
May 4	Selway River	Beaver Point	28,600
May 4	White Cap Creek	Paradise	28,600
May 7	Deep Creek	Below Cayuse Creek	28,600
May 7	Deep Creek	CCC Camp	28,600
May 7	Selway River	Magruder R.S.	28,600
May 11	Selway River	Magruder R.S.	34,000
May 11	Selway River	Magruder Crossing	34,000
May 12	White Cap Creek	Paradise	30,600
May 14	Deep Creek	Cayuse Creek	42,500
May 14	Deep Creek	Hell's Half Acre Bridge	42,500
May 15	Selway River	At hatching channel	83,600
May 16	White Cap Creek		34,000
May 16	Snake Creek		34,000
May 18	Selway River	Magruder R.S.	34,000
May 18	Deep Creek	CCC Camp	34,000
May 20	Selway River	Beaver Point	34,000
May 20	Selway River	Magruder Crossing	34,000
May 24	Selway River	Magruder Crossing	51,000
May 24	Selway River	Magruder R.S.	51,000
May 24	White Cap Creek	Paradise	34,000
May 31	White Sand Creek	White Sand Creek Bridge	42,500
May 31	Lochsa River	Mouth of Brushy Fork Ck	42,500
May 31	Selway River	Magruder Crossing	68,000
May 31	Selway River	Beaver Point	68,000
Jun 1	White Cap Creek	Paradise	51,000
Jun 1	Selway River	Magruder R.S.	68,000
Jun 3	White Cap Creek	Paradise	68,000
Jun 3	Deep Creek	Kit Carson	68,000
Jun 3	Deep Creek	CCC Camp	68,000
Jun 5	Selway River	At hatching channel	69,700
Jun 11	Selway River	At hatching channel	40,000
		Approximate Total	1,458,980

Table 15. Indian Creek Hatching Channel chinook fry transplants into the Selway River drainage, 1979.

Release dates	Water	Release site	Number of fry
April 23 -			
May 11	Selway River	At hatching channel	35,475
May 14	Selway River	Beaver Point	20,150
May 15	Selway River	Magruder R.S.	20,150
May 16	Snake Creek		18,060
May 17	Seep Creek	Cayuse Creek	50,400
May 18	Selway River	Deep Creek	36,960
May 19	White Cap Creek		16,800
May 21	White Cap Creek	Paradise	33,600
May 23	Selway River	Beaver Point	67,200
May 24	Selway River	Magruder R.S.	35,200
May 25	White Cap Creek	Paradise	13,400
May 29	Deep Creek	CCC Camp	67,200
May 31	Selway River	Deep Creek	15,200
June 2	Selway River	Magruder Crossing	41,280
June 3	White Cap Creek	Paradise	41,280
June 4	Selway River	Beaver Point	69,120
June 5	Selway River	Magruder R.S.	41,280
June 8	Selway River	Beaver Point	35,360
June 9	White Cap Creek	Paradise	54,400
June 10	Selway River	Deep Creek	54,400
June 11	Seaway River	Magruder R.S.	54,400
June 12	Selway River	At hatching channel	27,200
June 12	White Cap Creek	Paradise	27,200
June 15-20	Selway River	At hatching channel	72,175
		Total counted	947,890
		Estimate into river from overflow	100,000
		Grand total	1,047,890
		Eyed eggs placed in channel	2,135,672
		Percent emergence	49.1

Table 16. Summary of eyed egg plants into Red River Incubation Channel, 1962-1980.

Year	Species	Number of eggs planted	Egg source
1962	Steelhead	102,500	Clearwater River (Lewiston Dam)
1963	Steelhead	484,000	Clearwater River (Lewiston Dam)
	Coho	600,000	Eagle Creek Hatchery (Oregon)
1964	Steelhead	390,897	Clearwater River (Lewiston Dam)
	Coho	1,000,250	
1965	Steelhead	249,682	Clearwater River (Lewiston Dam)
	Coho	1,180,000	--
1966		0	--
1967	Steelhead	848,455	Clearwater River (Lewiston Dam)
1968	Steelhead	963,340	Clearwater River (Lewiston Dam)
1969	Steelhead	700,000	Dworshak Dam
1970	Spring chinook	1,631,500	Rapid River Hatchery
1971		0	--
1972	Spring chinook	1,293,592	Rapid River Hatchery
1973	Spring chinook	551,62.8	Rapid River Hatchery
1974		0	--
1975	Spring chinook	1,400,000	Cowlitz Hatchery
1976	Spring chinook	282,625	Rapid River Hatchery
1977		0	--
1978	Steelhead	1,617,750	Dworshak Hatchery
1979	Steelhead	1,644,500	Dworshak Hatchery
1980	Steelhead	669,500	Dworshak Hatchery

Table 17. Summary of anadromous salmonid fry emerging from Red River Incubation Channel, 1964-1980.

Brood year	Year emerging	Species	Number of fry emerging	Percent emergence	Distribution
1964	1964	Steelhead	298,000	76	American River and Red River
1964	1965	Coho	552,831	55	American River, Crooked River, Shissler Creek
1965	1965	Steelhead	212,507	85	American River, Crooked River, Shissler Creek
1965	1966	Coho	690,947	59	Upper Red River American River, Crooked River, Shissler Creek
1967	1967	Steelhead	705,322	83	American River, Crooked River, Big Elk, Leggett and Newsome creeks
1968	1968	Steelhead	709,800	74	Red River and Crooked River, Shissler, Newsome and Pat Brennan creeks
1969-1970	1969-1970	Steelhead	Not enumerated		All at channel
1970	1971	Spring chinook	Estimated 90% mortality		All at channel
1971	1972	No eggs planted			
1972	1973	Spring chinook	No enumeration		All at channel
1973	1974	Spring chinook	No enumeration		All at channel
1974	1975	No eggs planted			
1975	1976	Spring chinook	No enumeration		All at channel
1976	1977	Spring chinook	No enumeration		All at channel
1977	1977	No eggs planted			
1978[1/]	1978	Steelhead	No enumeration		All at channel
1979	1979	Steelhead	No enumeration		All at channel
1980	1980	Steelhead	No enumeration		All at channel

[1/]USFS commenced operation of the channel.

Table 18. Summary of eyed egg plants into Crooked River Incubation Channel, 1966-1979.

Year	Species	Number of eggs planted	Egg source
1966	Steelhead	480,598	Clearwater River (Lewiston Dam)
	Coho	3,000,000	--
1967	Coho	3,066,000	Washougal
1968	Coho	2,000,000	Cascade National
1969		0	
1970	Spring Chinook	1,608,262	Rapid River
1971	Spring chinook	800,000	Carson National
1972	Spring chinook	1,525,131	Rapid River
1973	Spring chinook	930,000	Rapid River
1974		0	
1975	Spring chinook	1,687,000	Cowlitz Hatchery
1976	Spring chinook	485,735	Rapid River
1977	Spring chinook	1,037,340	Rapid River
1978	Spring chinook	1,250,000	Rapid River
1979	Channel terminated (lease expired)		

Table 19. Summary of anadromous salmonld fry emerging from Crooked River Incubation Channel, 1966-1979.

Brood year	Year emerging	Species	Number of fry emerging	Percent emergence	Distribution
1966	1966	Steel head	436,956	91	South Fork tributaries
1966	1967	Coho	824,949		
1967	1968	Coho	487,960	16	At channel
1968	1969	Coho	Not enumerated	--	--
1969	1970	No eggs planted		--	--
1970	1971	Spring chinook	39,856	--	Newsome Creek And Red River
1971	1972	Spring chinook	113,400	--	Newsome Creek and Red River Newsome Creek
1972	1973	Spring chinook	No enumeration	--	All at channel
1973	1974	Spring chinook	34,920	--	Newsome creek
1974	1975	No eggs planted		--	--
1975	1976	Spring chinook	No enumeration	--	All at channel
1976	1977	Spring chinook	No enumeration	--	All at channel
1977	1978	Spring chinook	No enumeration	--	All at channel
1978	1979	Spring chinook	No enumeration	--	All at channel
1979	lease expired so channel was terminated.				

Table 20. Summary of fall Chinook eyed egg plants and emergent fry, Fenn Incubation Channel on the lower Selway River, 1960-1967.

Year	Number of eggs planted	Number of Fry emerging	Percent emergence	Egg source
1960	535,000	Not enumerated	--	Spring Creek National
1961	750,000	Not enumerated	--	Spring Creek National
1962	400,000	Not enumerated	--	Spring Creek National
1963	1,000,000	Not enumerated	--	Spring Creek National
1964	1,000,000	Not enumerated	--	Spring Creek National
1965	0	62,000	6	
1966	1,500,000	--	--	Spring Creek National
1967[1/]	1,548,000	1,485,965	99	Spring Creek National
1968	0	687,000	44	
Total	6,733,000			

Fall chinook program discontinued in 1968.

[1/] This year 587,917 fall chinook fingerlings ere also released into Middle Fork Clearwater River.

Submitted by:

Ron L. Lindland
Regional Fishery Biologist

Bert Bowler
Regional Fishery Manager

Approved by:

IDAHO DEPARTMENT OF FISH AND GAME

Jerry M. Conley, Director

Steven M. Huffaker, Chief
Bureau of Fisheries

Dexter Pitman
Anadromous Fisheries Manager